AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A method for determining the concentration of a reduced or oxidized form of a redox species in an electrochemical cell, said method comprising the steps of:

providing an electrochemical cell having a working electrode and a counter electrode, wherein the counter electrode is spaced from the working electrode by a distance between about 10 microns and about 500 microns;

allowing ingress of a sample into the electrochemical cell, the sample substantially covering the working electrode and the counter electrode;

applying an electric potential difference between the electrodes sufficient to oxidize or reduce the redox species at the working electrode, thereby producing a reduced or oxidized form of the redox species;

depleting the reduced or oxidized form of the redox species in the sample by oxidizing or reducing it at the working electrode; ~~and~~

thereafter measuring a charge passed at the working electrode, the charge indicative of the amount of reduced or oxidized form of the redox species depleted in the sample; and

the method further comprising the additional steps of,

selecting a potential of the working electrode such that a rate of electrooxidation of the reduced form or electroreduction of the oxidized form of the redox species is diffusion controlled;

selecting a distance between the working electrode and the counter electrode so that reaction products from the counter electrode arrive at the working electrode;

determining a change in current with time after application of the potential and prior to achievement of a steady state;

estimating a magnitude of a steady state current; and

obtaining from the change in current with time and the magnitude of the steady state current a value indicative of at least one of a diffusion coefficient and a concentration of the reduced form or the oxidized form of the redox species.

2. Canceled

3. (Currently amended) The method according to claim 1[[2]], wherein the additional steps are conducted after the other steps of claim 1.

4. (Currently amended) The method according to claim 1[[2]], wherein the additional steps are conducted concurrently with the other steps of claim 1.

5. (Original) The method according to claim 1, wherein the redox species is a mediator, and a concentration of a reduced form of the mediator or an oxidized form of the mediator is indicative of a concentration of an analyte.

6. (Original)The method according to claim 5, wherein the analyte is glucose.

7. (Original) A method according to claim 1, wherein the electrochemical cell has an effective cell volume of less than about 1.5 microliters.

8. (Original) A method according to claim 1, wherein the electrochemical cell further comprises a reagent.

9. (Original) A method according to claim 8, wherein the reagent comprises glucose oxidase dehydrogenase.

10. (Currently amended) A method for determining the concentration of a reduced or oxidized form of a redox species in an electrochemical cell, said method comprising the steps of:

providing an electrochemical cell having a working electrode and a first and second counter electrode, wherein the first counter electrode is spaced from the working electrode by a distance greater than about 500 microns;

allowing ingress of a sample into the electrochemical cell, the sample substantially covering the working electrode and the first counter electrode;

applying an electric potential difference between the working electrode and the first counter electrode ~~electrodes~~ sufficient to oxidize or reduce the redox species at the working electrode, thereby producing a reduced or oxidized form of the redox species;

depleting the reduced or oxidized form of the redox species in the sample by oxidizing or reducing it at the working electrode; ~~and~~

thereafter measuring a charge passed at the working electrode, the charge indicative of the amount of reduced or oxidized form of the redox species depleted in the sample;

the method including the additional steps of;

applying an electric potential difference between the working electrode and the second counter electrode wherein the working electrode and the second counter electrode are spaced by less than about 500 microns;

selecting a potential of the selected working electrode such that a rate of electrooxidation of the reduced form or electroreduction of the oxidized form of the redox species is diffusion controlled;

determining a change in current with time after application of the potential and prior to achievement of a steady state;

estimating a magnitude of a steady state current; and

obtaining from the change in current with time and the magnitude of the steady state current a value indicative of at least one of a diffusion coefficient and a concentration of the reduced form or the oxidized form of the redox species.

11. Canceled

12. (Currently amended) The method according to claim 10~~11~~, wherein the additional steps are conducted after the other steps of claim 10.

13. (Currently amended) The method according to claim 10~~11~~, wherein the additional steps are conducted concurrently with the other steps of claim 10.

14. (Original) The method according to claim 10, wherein the redox species is a mediator, and a

concentration of a reduced form of the mediator or an oxidized form of the mediator is indicative of a concentration of an analyte.

15. (Original) The method according to claim 14, wherein the analyte is glucose.

16. (Original) A method according to claim 10, wherein the electrochemical cell has an effective cell volume of less than about 1.5 microliters.

17. (Original) A method according to claim 10, wherein the electrochemical cell further comprises a reagent.

18. (Original) A method according to claim 17, wherein the reagent comprises glucose oxidase dehydrogenase.

19. (New) A method according to claim 1, wherein the electrochemical cell includes a porous membrane.

20. (New) A method according to claim 10, wherein the electrochemical cell includes a porous membrane.

21. (New) A method for determining the concentration of a reduced or oxidized form of a redox species in an electrochemical cell, said method comprising the steps of:

providing an electrochemical cell having a working electrode, a counter electrode, and a porous membrane, wherein the counter electrode is spaced from the working electrode by a distance between about 10 microns and about 500 microns;

allowing ingress of a sample into the electrochemical cell, the sample substantially covering the working electrode and the counter electrode;

applying an electric potential difference between the electrodes sufficient to oxidize or reduce the redox species at the working electrode, thereby producing a reduced or oxidized form of the redox species;

depleting the reduced or oxidized form of the redox species in the sample by oxidizing or reducing it at the working electrode;

and thereafter measuring a charge passed at the working electrode, the charge indicative of the amount of reduced or oxidized form of the redox species depleted in the sample.

22. (New) A method for determining the concentration of a reduced or oxidized form of a redox species in an electrochemical cell, said method comprising the steps of:

providing an electrochemical cell having a working electrode, a counter electrode, and a porous membrane, wherein the counter electrode is spaced from the working electrode by a distance greater than about 500 microns;

allowing ingress of a sample into the electrochemical cell, the sample substantially covering the working electrode and the counter electrode;

applying an electric potential difference between the electrodes sufficient to oxidize or reduce the redox species at the working electrode, thereby producing a reduced or oxidized form of the redox species;

depleting the reduced or oxidized form of the redox species in the sample by oxidizing or reducing it at the working electrode; and thereafter measuring a charge passed at the working electrode, the charge indicative of the amount of reduced or oxidized form of the redox species depleted in the sample.